<u>CLAIM LISTING</u>

-1. (Previously presented) A method of displaying digital content on a screen, said method comprising:

-accessing said digital content including images and text strings;

-laying out said images and text at a virtual pixel resolution using layout pixel sizes for said images and text, so as to assign a horizontal and vertical virtual position in said layout to each of said images and each portion of a string of text displayed on a given line; and

-drawing at least a portion of said layout on said screen;

-wherein:

-the displayed portion of the layout has a displayed pixel resolution that is scaled down by a scale factor relative to the pixel resolution of said portion in the layout performed at said virtual pixel resolution;

-images and text in said displayed portion of the layout are shown at pixel coordinates that correspond to the positions of said images and text in the layout, as scaled down by said scale factor;

-the images and text are drawn in said display at scaled-down pixel sizes that correspond to the pixel sizes used for said images and text in the layout, as scaled down by said scale factor;

-the image of a string of text in said display is composed from a succession of font bitmaps having pixel sizes that are scaled down by said scale factor

relative to the size allocated to the characters of
said string in said layout; and

-the shape and pixel alignment of a given character
represented in said display by one of said font
bitmaps have been selected as a function of the given
size of said bitmap to improve the readability of said
bitmap at said given bitmap size.

-2. (Original) A method as in Claim 1 wherein said digital
content is a web page.

-3. (Original) A method as in Claim 2 wherein said layout
image sizes at which images are laid out in said web pages
are sizes of said images specified by the content of said
web page.

-4. (Original) A method as in Claim 2 wherein
    -said method includes allowing a user to select to
    have said scaled-down display of a given layout
    performed at different scale factors;
    -different font sizes are used in said scaled-down
    display for similar text at different selected scale
    factors; and
    -the shape and pixel alignment of corresponding
    characters in the font bitmaps of such different font
    sizes are different to improve readability of font
    bitmaps at each of such different font sizes.

-5. (Original) A method as in Claim 2 wherein said scaled-
down pixel sizes include font sizes of 8 pixels per em or
less.

-6. (Original) A method as in Claim 5 wherein the characters shapes represented by font bitmaps of said pixel size of eight pixel per em or less have been hinted for improved readability at such size.

-7. (Previously presented) A method of displaying digital content on a screen, said method comprising:

   -accessing said digital content including images and text strings;

   -laying out said images and text at a virtual pixel resolution using layout pixel sizes for said images and text, so as to assign a horizontal and vertical virtual position in said layout to each of said images and each portion of a string of text displayed on a given line; and

   -drawing at least a portion of said layout on said screen;

   -wherein:

      --the displayed portion of the layout has a displayed pixel resolution that is scaled down by a scale factor relative to the pixel resolution of said portion in the layout performed at said virtual pixel resolution;

      -images and text in said displayed portion of the layout are shown at pixel coordinates that corresponding to the positions of said images and text in the layout, as scaled down by said scale factor;

      --the images and text are drawn in said display at scaled-down pixel sizes that correspond to the pixel sizes used for said images and text in the layout, as scaled down by said scale factor;

--the image of a string of text in said display
is composed from a succession of font bitmaps
having pixel sizes that are scaled down by said
scale factor relative to the size allocated to
the characters of said string in said layout; and
--the shape and pixel alignment of a given
character represented in said display by one of
said font bitmaps have been selected as a
function of the given size of said bitmap to
improve the readability of said bitmap at said
given bitmap size;
--said digital content is a web page;
--the size of a given text string at the given
scaled-down text size is a function of the pixel
dimensions of each character in the string at the
given scaled-down pixel size, where the pixel
dimensions of each character is determined in
part at a function of the dimensions of the pixel
bitmap needed to represent the particular
character's shape at a desired level of
readability at said scaled-down text size; and
--the size used for a given string in the layout
corresponds to the size of the given string at
the given scaled-down text size at which said
string will be drawn in said scaled-down display,
scaled-up by said scale factor.

-8. (Original) A method as in Claim 2 wherein:
-said screen is part of a computer having an operating
system that displays digital content, including text
strings composed on said computer from individual font
bitmaps, on said screen in a portrait orientation; and

-said scaled-down display of a portion said layout is drawn on said screen in a landscape orientation;

-wherein said composing of text from individual font bitmaps composes text in a landscape orientation using font bitmaps having a landscape orientation relative to said screen.

-9. (Original) A method as in Claim 8 wherein:

-the screen on which the scaled-down display is drawn has pixels comprised of a given arrangement of separately-addressable, differently-colored subpixels;

-said arrangement of subpixels within pixels of the screen cause subpixel color to vary:

--along a first bitmap display axis relative to bitmaps drawn on said screen in a portrait orientation; and

--along a second, perpendicular bitmap display axis relative to bitmaps drawn on said screen in a landscape orientation;

-a given font bitmap used to compose the image of text in said scaled-down display is a subpixel-optimized bitmap that:

--is optimized for display in which said subpixel color variation occurs along said second display axis relative to said font bitmap; and

--assigns a luminosity value to each given sub-pixel of a screen pixel having said given arrangement of differently-colored subpixels that is drawn to by said font bitmaps as a function of:

--a coverage value representing the percent of the given subpixel that is covered by a character shape being represented by the font bitmap;

--in the case of at least some subpixels of said font bitmap, a color balancing distribution of a percent of the given subpixel's coverage value from said coverage value to coverage values of nearby subpixels, including subpixels of different colors, made to a prevent color imbalance that would result from the difference between the given subpixel's coverage value and the coverage values of a given set of one or more nearby subpixels of different colors; and

--in the case of at least some subpixels of said font bitmap, such a color balancing distribution to the given subpixel's coverage value of a portion of coverage values from one or more nearby subpixels.

-10. (Original) A method as in Claim 2 wherein different portions of text specified by the web page as being different types of text that are commonly displayed with different size fonts are represent with fonts of the same size before performing said layout and display to allow a greater quantity of readable text to fit in the scaled-down display.

-11. (Previously presented) A method of displaying digital content on a screen, said method comprising:

-accessing said digital content including images and text strings;

-laying out said images and text at a virtual pixel
resolution using layout pixel sizes for said images
and text, so as to assign a horizontal and vertical
virtual position in said layout to each of said images
and each portion of a string of text displayed on a
given line; and
-drawing at least a portion of said layout on said
screen;
-wherein:
    --the displayed portion of the layout has a
    displayed pixel resolution that is scaled down by
    a scale factor relative to the pixel resolution
    of said portion in the layout performed at said
    virtual pixel resolution;
    --images and text in said displayed portion of
    the layout are shown at pixel coordinates that
    corresponding to the positions of said images and
    text in the layout, as scaled down by said scale
    factor;
    --the images and text are drawn in said display
    at scaled-down pixel sizes that correspond to the
    pixel sizes used for said images and text in the
    layout, as scaled down by said scale factor;
    --the image of a string of text in said display
    is composed from a succession of font bitmaps
    having pixel sizes that are scaled down by said
    scale factor relative to the size allocated to
    the characters of said string in said layout; and
    --the shape and pixel alignment of a given
    character represented in said display by one of
    said font bitmaps have been selected as a
    function of the given size of said bitmap to

improve the readability of said bitmap at said
given bitmap size;

--the font bitmaps used to compose the image of
text in said scaled-down display are anti-aliased
bitmaps that assign a color value to a given
screen pixel as a graded function of a coverage
value representing the percent of the given pixel
that is covered by a character shape being
represented by the font bitmap; and

--the shape and pixel alignment of a character
represented by such a font bitmap has been
selected to increase the degree of alignment of
edges of the character shape with pixel
boundaries of the font bitmap as a function of
the particular pixel size of each such a font
bitmap.

-12. (Original) A method as in Claim 11 wherein:

-the screen on which the scaled-down display is drawn
has pixels comprised of a given arrangement of
separately-addressable, differently-colored subpixels;

-the anti-aliased font bitmaps used to compose the
image of text in said scaled-down display are
subpixel-optimized bitmaps that assign a luminosity
value to each given subpixel of a screen pixel having
said given arrangement of differently-colored
subpixels as a function of:

--a coverage value representing the percent of
the given subpixel that is covered by a character
shape being represented by the font bitmap;

--in the case of at least some subpixels of said
font bitmaps, a color balancing distribution of a

percent of the given subpixel's coverage value
from said coverage value to coverage values of
nearby subpixels, including subpixels of
different color, made to a prevent color
imbalance that would result from the difference
between the given subpixel's coverage value and
the coverage values of a given set of one or more
nearby subpixels of different colors; and

––in the case of at least some subpixels of said
font bitmaps, such a color balancing distribution
to the given subpixel's coverage value of a
portion of coverage values from one or more
nearby subpixels.

–13. (Original) A method as in Claim 12 wherein said color
balancing distributions only distribute portions of a
subpixel's coverage value that causes color imbalance
within the whole pixel of which it is part.

–14. (Original) A method as in Claim 12 wherein:

–the images drawn in said scaled-down display are
subpixel-optimized images that assign a luminosity to
each differently-colored subpixel in the display of
such a scaled-down image as a function of the amount
of luminosity of the given subpixel's color found in a
window associated with the given subpixel in the
higher resolution image the scaled-down image
represents; and

–the window in the higher resolution image associated
with each subpixel of a given pixel has a different
position relative to the higher resolution image that

corresponds to the different position of its
corresponding subpixel in the scaled-down image.

-15. (Currently amended) A method as in Claim 1 wherein:
    -a first computer device performs said accessing of
    the digital content, laying out of said digital
    content, and said scaling down of said images;
    -said coordinates of images and text produced as a
    result of said layout, said scaled down images, and
    said text contained in said digital content are
    downloaded from said first computer device to said
    second computer device; and
    -a second computer device has said screen recited in
    Claim 1 and performs said drawing of the scaled-down
    display on said screen, including the composing of
    text images from font bitmaps.

-16. (Original) A method as in Claim 1 wherein:
    -said digital content is a screen image produced at
    said virtual resolution by one or more application
    programs; and
    -said scaled-down display shows said portion of said
    screen image with the images and text of said screen
    image and their positions scaled down by said scale
    factor.

-17-20. (Canceled)

-21. (Previously presented) A method of displaying a web
page comprising:
    -accessing the web page, including one or more images
    and one or more text strings;

-displaying in a landscape orientation, in a scaled-
down manner, a portion of said web page, including at
least some of images and text strings;
-wherein said displaying is performed on a screen of a
computer having an operating system that displays an
associated graphical user interface on said screen in
a portrait orientation;
-wherein the scaled-down displaying of said web page
includes:

    --displaying a given images at a scaled-down
    pixel size; and
    --displaying a given text strings with a string
    image composed on said computer from a plurality
    of font bitmaps corresponding to the characters
    of said string when displayed in said landscape
    orientation; and
    --the shape and pixel alignment of a given
    character represented in said display by one of
    said font bitmaps have been selected as a
    function of the given size of said bitmap to
    improve the readability of said bitmap at said
    given bitmap size;

-and wherein:

    --the font bitmaps used to compose one or more of
    said string images are anti-aliased bitmaps that
    assign a color value to given screen pixel as a
    graded function of a coverage value representing
    the percent of the given pixel that is covered by
    a character shape being represented by the font
    bitmap; and
    --the shape and pixel alignment of a character
    represented by such a font bitmap has been

selected to increase the degree of alignment of
edges of the character shape with pixel
boundaries of the font bitmap as a function of
the particular pixel size of each such a font
bitmap.

-22. (Original) A method as in Claim 21 wherein:
-font bitmaps used to compose string images include
small font bitmaps having a small font size of eight
pixels per em or less; and
-the shape and pixel alignment of a character
represented by such a small font bitmap has been
selected to increase the degree of alignment of edges
of the character shape with pixel boundaries of the
small font bitmap as a function of the particular
pixel size of each such small font bitmap.

-23. (Original) A method as in Claim 22 wherein the font
bitmaps of said small font size represent a majority of
characters of the Roman alphabet within an advance width of
four pixel columns or less.

-24. (Original) A method as in Claim 23 wherein the font
bitmaps of said small font size represent a majority of
lowercase letters with an x-height greater than four
pixels.

-25. (Original) A method as in Claim 21 wherein:
-the screen on which the scaled-down display is drawn
has pixels comprised of separately-addressable,
differently-colored subpixels, in which the
differently colored subpixels of each pixel have a

first subpixel arrangement when said screen viewed in the landscape orientation, and a second subpixel arrangement when the screen viewed in the portrait orientation;

-the anti-aliased font bitmaps used to compose said text images are subpixel-optimized bitmaps that assign a luminosity value to each given subpixel of a screen pixel having said first subpixel arrangement as a function of:

--a coverage value representing the percent of the given subpixel that is covered by a character shape being represented by the font bitmap;

--in the case of at least some subpixels of said font bitmaps, a color balancing distribution of a percent of the given subpixel's coverage value from said coverage value to coverage values of nearby subpixels, including subpixels of different color, made to a prevent color imbalance that would result from the difference between the given subpixel's coverage value and the coverage values of a given set of one or more nearby subpixels of different colors; and

--in the case of at least some subpixels of said font bitmaps, such a color balancing distribution to the given subpixel's coverage value of a portion of coverage values from one or more nearby subpixels.

-26. (Original) A method as in Claim 25 wherein:

-the subpixels of a given pixel in said screen vary in color along the horizontal direction when said screen is viewed in said landscape direction;

-so the added resolution made possible by subpixel
optimization increases the horizontal resolution
available to show text characters drawn on said screen
in the landscape orientation.

-27. (Original) A method as in Claim 25 wherein said color
balancing distributions only distribute portions of a
subpixel's coverage value that causes color imbalance
within the whole pixel of which it is part.

-28. (Original) A method as in Claim 27 wherein the
character shapes represented by said subpixel-optimized
font bitmaps and the alignment of such shapes to the pixels
in said bitmaps have been selected as a function of the
size of such bitmaps to improve the alignment of the edges
of such shapes which edges of bitmap pixels, so as to
decrease the differences between subpixel coverage values
within the pixels of such bitmaps that require color
balancing to prevent color imbalances.

-29-31. (Canceled)

-32. (Original) A computer system for displaying digital
content on a screen, said system comprising:
    -one or more processors for executing program
    instructions stored in computer readable memory; and
    -one or more computer readable memories storing
    program instructions for causing said one or more
    processors to:
        --access said digital content including images
        and text strings;

--lay out said images and text at a virtual pixel
resolution using layout pixel sizes for said
images and text, so as to assign a horizontal and
vertical virtual position in said layout to each
of said images and each portion of a string of
text displayed on a given line; and

--draw at least a portion of said layout on said
screen;

-wherein the program instructions are such that:

--the displayed portion of the layout has a
displayed pixel resolution that is scaled down by
a scale factor relative to the pixel resolution
of said portion in the layout performed at said
virtual pixel resolution;

--images and text in said displayed portion of
the layout are shown at pixel coordinates that
correspond to the positions of said images and
text in the layout, as scaled down by said scale
factor;

--the images and text are drawn in said display
at scaled-down pixel sizes that correspond to the
pixel sizes used for said images and text in the
layout, as scaled down by said scale factor;

--the image of a string of text in said display
is composed from a succession of font bitmaps
having pixel sizes that are scaled down by said
scale factor relative to the size allocated to
the characters of said string in said layout; and

--the shape and pixel alignment of a given
character represented in said display by one of
said font bitmaps have been selected as a
function of the given size of said bitmap to

improve the readability of said bitmap at said
given bitmap size.

-33.   (Canceled)